

Serial No. 09/928,616
Examiner Yoon
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LISTING OF THE CLAIMS

1. (Currently Amended) An aqueous-based cross-linkable binder composition comprising
 - (A) an aqueous dispersion of an aldehyde-functional polyurethane having a number average molecular weight of more than 1,000 and an average aldehyde functionality of ≥ 2 , which polyurethane comprises ionic and/or non-ionic dispersing groups, and
 - (B) a low-molecular weight aldehyde-reactive cross-linker selected from the group of low-molecular weight polyamines, and low-molecular weight compounds comprising at least one group of one of the formulae $E^1-CHR^1-E^2$ and $H-C-(E^1E^2E^3)$, wherein $-E^1$, $-E^2$ and $-E^3$ are independently chosen from electron-withdrawing groups such as $P(-O)O$, CO , CN , SO_2 , NO_2 and wherein R^1 has the meaning of hydrogen or a hydrocarbon radical having 1 to 10 carbon atoms.
2. (Original) The aqueous-based cross-linkable binder composition according to claim 1, wherein the cross-linker comprises acetoacetate groups.
3. (Original) The aqueous-based cross-linkable binder composition according to claim 1, wherein the number average molecular weight of the aldehyde-functional polyurethane is within the range of from 1,000 to 100,000.
4. (Currently Amended) The aqueous-based cross-linkable binder composition according to claim 1, wherein the polyurethane is obtainable obtained by reaction of:
 - a) an organic polyisocyanate,
 - b) an organic compound containing at least two isocyanate-reactive groups and having a number average molecular weight in the range of 400 to 6,000.

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- c) (a) mono-functional and/or poly-functional isocyanate-reactive compound(s) bearing nonionic and/or ionic dispersing groups (or groups which may subsequently be converted into such dispersing groups),
d) an isocyanate-reactive aldehyde-functional compound,
e) optionally, an organic polyol having a weight average molecular weight of less than 400, and
f) optionally, active hydrogen-containing chain extending material.
5. (Currently Amended) The aqueous-based cross-linkable binder composition according to claim 4, wherein the ionic dispersing group is an anionic dispersing group selected from the group consisting of carboxylate, sulphonate and/or phosph(on)ate salt groups.
6. (Original) The aqueous-based cross-linkable binder composition according to claim 4, wherein the for the nonionic dispersing group use is made of a C₁-C₄ alkoxy poly C₂-C₃ alkylene-oxide group in an amount between 2.5 and 20 wt.%, based on the polyurethane.
7. (Original) The aqueous-based cross-linkable binder composition according to claim 6, wherein the C₁-C₄ alkoxy poly C₂-C₃ alkylene-oxide group is used in an amount between 5 and 15 wt.%.
8. (Original) The aqueous-based cross-linkable binder composition according to claim 1, wherein the aldehyde-functional polyurethane to low-molecular weight aldehyde-reactive cross-linker equivalence ratio, based on the aldehyde-reactive groups of the low-molecular weight cross-linker and the aldehyde groups of the polyurethane, is in the range of from 0.5:1 to 5:1.
9. (Currently Amended) The aqueous-based cross-linkable binder composition according to claim 2, wherein the acetoacetate cross-linker is

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selected from the group consisting of trimethylol propane triacetoacetate and trimethylol ethane triacetoacetate.

10. (Currently Amended) The aqueous-based cross-linkable binder composition according to claim 1, wherein the polyamine cross-linker is selected from the group consisting of 2,2'-alkylene diamines having from 2 up to 20 carbon atoms in the alkylene group, cyclohexylene diamines, 2-methyl piperazine, isophorone diamine, adducts of a (poly)amino compound to a polyfunctional epoxy, isocyanate, maleinate, fumarate or (meth)acryloyl compound, and hydrogenated polynitro or polynitrile compounds.
11. (Original) The aqueous-based cross-linkable binder composition according to claim 10, wherein the polyamine cross-linker is 3-[2,2-bis-(3-aminopropoxymethyl)-butoxy]-propylamine.
12. (Currently Amended) A method of using the binder composition according to claim 1 in the production of primer compositions or clear coat compositions.
13. (Original) A method of using the binder composition according to claim 1 in the refinishing of cars.
14. (New) Aqueous-based cross-linkable binder composition according to claim 1, wherein the electron withdrawing groups are selected from the group consisting of P(=O)-O-, -CO-, -CN-, -SO₂-, -NO₂